THE GLASS MANUFACTURE.

(Continued from our last.)

Our preceding remarks were intended to shew that glass-making is of a period anterior to that usually assigned; and, indeed, so remote, that we are left to draw our own inferences from the position and circumstances under which certain specimens of ancient manufacture have been found; it is, however, of *Window Glass*, the introduction of that material, and the various useful and decorative applications of it to buildings, that we are principally to treat.

The Greek and Roman histories make no mention of window glass; the *lapis specularis* of the latter people served a similar purpose, and, there is no question, was the *Talc* of modern mineralogists; they also probably made use of native crystal for glazing, but to a very limited extent, and only in the palaces of the inordinately rich.

The first allusion to glass windows is by St. Jerome, A.D. 422; and little more than a century later the church of St. Sophia, Constantinople, had them. The venerable *Bede* mentions the rebuilding of the abbey and church of Wearmouth, in the year 674, and states that the abbot, *Benedict*, brought over from France, among other artificers, some skilled in making glass, to be used in the new erections; other authorities ascribe the introduction to Bishop Wilfred, who died in 711, but it may be collected that between these periods lies the accurate date. These notices relate to common glass; the coloured material we purpose speaking of separately. Pursuing, then, our researches as to the progress made in the introduction of glass windows into the dwelling-houses of England, we gather much curious and authentic information from the old chronicles of *Hollinshed* and *Harrison*; it is, however, evident that for many centuries the use of glass was confined to churches, and a very few of the mansions of the nobility. The latter authority, who wrote in 1584, says, "Of old our country houses, instead of glass, did much use *lattice*, and that made either of wicker or fine rafts of oak, in chequer-wise; I read, also, that some of the better sort did make panels of horn instead of glass, and fixed them in wooden *calms* (casements); but as horn in windows is now quite laid down in every place, so our lattices are also grown into disuse, because glass is become to be so plentiful, and within very little so *good cheap*, if not better than the other. In the forementioned old time the houses of our princes and noblemen were often glazed with *Beryl*, or fine chrystal; an example whereof is yet to be seen in Sudley Castle, but this especially in the time of the Romans, wherroof fragments have been taken up in old ruins; but now these are not in use, so that only *the dearest glass* is most esteemed, for we have divers sorts from abroad; but English, if made with diligence, would be so good as the best." As a set-off against the plentifulness of glass indicated by *Harrison*, the following extract from the *Northumberland Household Book* shews that although it may have been currently used in towns, glass was still considered a costly appendage to the country seats and residences, even of the great; the entry in this family record relates to a survey of Alnwick Castle, taken in 1573, and states "That because of extreme winds, the glass of the windows of this and other of my lord's castles and houses doth decay and waste, *it was good the whole lights of every window were taken down and laid up in safety, at the departure of his lordship from lying at any of his said castles*, and the same might then be set up of new at small charges (when required); whereas now the decay thereof shall be very costly." The above is certainly as curious a specimen of proposed economy as any we have met with, but considering the then expense of glazing, together with the difficulty of procuring the services of a glazier, we are inclined to think it may have been a practice to take out and treasure up the casements of a mansion in the absence of its owner; though, perhaps, suggested to the rich and puissant Earl of Northumberland for the first time in 1573.

The making of window glass had no doubt been long practised here, but imperfectly, and at intervals; the regular manufacture travelled from the staple mart in the Venetian States, through France, where a rivalry with the [illegible] raged, and became firmly established in Crutched Friars, London, in 1557, but not without exciting much popular discontent. *Harrison*, whom we have previously quoted, and who wrote within twenty years of the time, says in his chapter "*Of the metals to be had in our own land*," "the smelting of iron breedeth great expense and waste of wood, as doth the making of our pots and table vessels of glass, wherein is much loss, sith it is so quickly broken;" and this opinion spread to so great an extent, that the destruction of the glass houses was contemplated; and, indeed, on the 4th of September, 1575, the large glass house in Crutched Friars was destroyed by fire, not without strong suspicion of incendiarism. Of this event Harrison says, "this house of Crossed Friars had a small time before consumed a great quantity of wood, by making of fine drinking glasses, and yet had within it forty thousand billets of wood, which was all burned to the stone walls: which walls greatly defended the fire from spreading further." He laments also the growing predilection for glass ware in these words: "It is a world to see in these our days, wherein gold and silver aboundeth, how our gentility, as loathing these metals because of their plenty, do choose rather of the Venice glasses both for our wine and beer, than any of these metals, or stone, wherein before time we have drank. But such is the nature of man, that he coveteth things difficult to be attained, and so esteemeth this stuff, that many become rich with trade into *Murrina* near Venice, from whence the very best is daily to be had; such as for beauty do match the chrystal, or the ancient *Murrhina Vasa*, whereof now no man hath knowledge. In the wealthy commonality the like desire for glass is not neglected, and the poorest will have glass if they may; but sith the Venetian is too dear for them, they content themselves with such as are made at home of *fern and burned stone*; but, in fine, all go one way, that is to shrede at last; and their pieces do turn unto no profit."

The premises at Crutched Friars were, however, speedily re-established, and the art of window-glass making gradually spread to other localities, but the parent site retained for a long time its character for producing the best qualities. Wood continued to be used as fuel for smelting until about the year 1619, when Sir R. Mansell discovered a method of making glass with coal, and obtained a proclamation to be issued by James I. prohibiting thenceforth the use of wood, which had the effect of establishing a monopoly in the inventor; and, in fact, Mansell subsequently procured a patent right for a very long term of years. In 1635 Charles I. confirmed the patent, and prohibited the importation of foreign glass, otherwise than through the agency of the patentee, for special purposes, such as the use of the court and nobility. The earliest *plate* glass made in England was at the Savoy House, Strand; and the first *plate* for looking-glasses, coach windows, and similar purposes, was made at Lambeth by Venetian workmen brought over in 1670 by the Duke of Buckingham.

The colouring of glass, that is imparting various tints throughout its substance, has been noticed as originating at a period beyond the reach of investigation, but the application of this branch of the art to decorative purposes is much more recent, most authorities agreeing to place it about the close of the eighth century; when the universality of the Church of Rome, and the religious feeling of mankind, stimulated the erection of numerous ecclesiastical edifices upon a vast and magnificent scale. The earliest specimens of stained glass are of the description called *pot-metal*, the entire pot, or make of glass, being coloured previous to its being blown, or cast into sheets for glazing, and differing, therefore, from the modern art of staining several colours upon the same breadth of glass. It is by no means certain at what date coloured glazing, with home manufacture, came into use, but it is supposed to have been in the reign of John, about 1202, previous to which the material was wholly imported from Venice and the Italian states. The most authentic mention of coloured glazing is in the reign of Henry III., (who succeeded John in 1216), in a command to his treasurer for the painting of three windows in the chapel of St. John, the first second of the Trinity, and a third of St. John the Apostle. From this time, and throughout the fourteenth and fifteenth centuries, the art was in great requisition as an indispensable auxiliary to the splendour of the pointed style of Gothic architecture; native talent shone forth, and remains of it in the halls and chapels of our universities, and many of our cathedrals, attest the profeiency attained. The abbeys and monasteries also, no doubt, exhibited this species of decoration to an extent and perfection of which we have but very inadequate ideas. There is a contract still extant entered into by the authorities of York Cathedral in 1388, which shews the trade of a glazier to have been then an established one; in this instance he undertakes to perform his work at the rate of sixpence per foot for white glass, and one shilling for coloured. A little later (in the reign of Henry IV.) there is a contract entered into by the same parties with John Thornton, glazier of Coventry, for putting up the eastern window of York Cathedral, which he undertakes to complete in three years, receiving four shillings per week as wages, a gratuity of 100 shillings at the end of each year, and ten pounds upon full completion of the work to the satisfaction of his employers. In this case it is likely the coloured glass was imported at the charge of the clergy. We have seen another curious document dated in 1439, which goes to shew that English coloured glass was not then greatly esteemed; it is a contract between the Countess of Warwick and John Pruddi, glazier of Westminster, the stipulation between the parties being that in glazing a magnificent tomb to be erected for her late husband (probably one of the mortuary chapels of the period) the tradesman *shall use no glass of England*, but glass from beyond seas. There is, however, reason to believe, that the art progressed rapidly, until the Reformation put an end to what was termed ungodly ostentation, and idolatrous display, and at the close of the reign of Elizabeth it had nearly disappeared. A revival towards the middle of the seventeenth century produced Isaac Oliver and William Price, who were eminent in the very limited sphere allotted to their talent. After the death of the former, Price was for many years the only glass painter in the country. He is said towards the close of his life to have discovered a method of readily staining a clear, bright, and transparent red, the most difficult and expensive colour to strike, but this desirable secret died with him. Price was succeeded by a person at Birmingham, who, in 1757, fitted up a window for Lord Lyttleton, in the church of Hagley. Subsequently Peckit, of York, attained to great repute in the art.

The ancient mode of combining coloured glass to form pictures for the adornment of church architecture, was very peculiar. The pieces used were generally small, and held together by a vein of lead, run upon the back of the joinings; the conception of the subjects chosen is quaint, and stiffly executed; and in ornamental borders there is great absence of variety; yet the scanty remains of these pictorial representations never fail to awaken a kind of veneration, though artistic defects are strikingly apparent. It would seem that this congenial ornament, like the style that originated it, had peculiarities of application which invariably suffer when modern innovation is attempted to be engrafted upon it. Harmony of colour, which the ancients appear to have arrived at almost intuitively in this branch of art, has much to do with the effect we admire. The mosiac-like work to which they limited themselves, or were confined to by the dimensions of the glass, and the avoidance of broad masses of strong colour, contribute also materially to the same end. The style and manner of the period of which we have been speaking will perhaps never be successfully emulated; nor should this be matter of regret; the proficiency in glass-staining at the present day, though of a different class and character, is more extensively available, and susceptible of such variety of application as to invite the attention of builders of every rank. We scarcely need mention the beautiful effect to be produced in private dwellings by extending the demand to subjects other than those of a religious kind; landscape, flowers, disperrd and lace-work patterns in subdued colours, are especially congenial for these purposes; and [illegible] the distribution of ornamental subjects, the

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